

**Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services**

**STATEMENT OF BASIS**

**Monsanto Company  
Monsanto Company - Luling Plant  
Phosphorous Trichloride Unit  
Luling, St. Charles Parish, Louisiana  
Agency Interest Number: 1096  
Activity Number: PER20070010  
Proposed Permit Number: 2596-V3**

**I. APPLICANT**

**Company:**

Monsanto Company - Luling Plant  
PO Box 174  
Luling, Louisiana 70070-0174

**Facility:**

Monsanto Company  
12501 River Rd, Luling, St. Charles Parish, Louisiana  
Between LA Hwy 18 (River Road) and U.S. Hwy 90 in St. Charles Parish,  
Louisiana  
Approximate UTM coordinates are 755.8 kilometers East and 3313.0 kilometers  
North, Zone 15

**II. FACILITY AND CURRENT PERMIT STATUS**

Monsanto Company produces a variety of products at its Luling Facility with the major product being glyphosate, an active ingredient in Roundup®. Manufacturing units include: Disodium Iminodiacetate (DSIDA), Phosphorous Trichloride ( $\text{PCl}_3$ ), Glyphosate Intermediate (GI), Glyphosate, Formulation and Packaging, Cyanuric Acid (CYA), and Chlorinated Cyanuric Acid (ACL). The Luling Plant also manufactured Acetaminophen until the year 2004 when its production was permanently shutdown.

Monsanto Company - Luling Plant is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the facility. These include:

Permit No.	Unit or Source	Date Issued
2557-V1	DSIDA Unit	11/21/2006
2596-V2	$\text{PCl}_3$ Unit	12/18/2006
2574-V4	GI Unit	1/25/2007
2517-V6	Glyphosate Plant	12/13/2006
2533-V3	CYA & ACL Units	10/17/2006
2567-V3	Steam Plant and Supporting Units	10/5/2005

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### **III. PROPOSED PROJECT/PERMIT INFORMATION**

#### **Application**

A permit application was submitted on September 6, 2007 requesting a Part 70 operating permit modification for the  $\text{PCl}_3$  Unit.

#### **Project**

The Phosphorous Trichloride ( $\text{PCl}_3$ ) Unit produces  $\text{PCl}_3$  by reacting phosphorous and chlorine. Chlorine is supplied from either chlorine railcars or a pipeline. The phosphorous tanks are continuously purged with nitrogen and sealed with water. The reaction takes place in four parallel continuous reactors. The  $\text{PCl}_3$  produced, which is in a gaseous state, is then purified by condensation and distillation. The product tanks and the railcar loading facilities are completely enclosed in a building. A process scrubber controls the process vents and any  $\text{PCl}_3$  release in the building. A hydrolysis scrubber controls periodic reactor cleanouts. Finally a chlorine scrubber controls all chlorine line purges and any releases from the chlorine handling system.

In this permit Monsanto requested to include the following changes:

- Increase capacity from 800 Mlbs/yr to 1,000 Mlbs/yr of  $\text{PCl}_3$ .
- Add a 5<sup>th</sup> reactor vessel and associated equipment.
- Add new emission sources:
  - EPN 04-07, No. 3 Phosphorous Tank Seal Pot Vent; EPN 05-07, Cooling Tower No. 4
- Incorporate previous emission sources into insignificant activities:
  - EPN 05-90, EPN 31-95, & EPN 34-98 – Therminol Tanks No. 1, 2, & 3
- Add new insignificant activities
  - New Therminol Tank
  - Existing Therminol Knock-Out Tank

#### **Proposed Permit**

Permit 2596-V3 will be the modification of Part 70 operating permit 2596-V2 for the  $\text{PCl}_3$  Unit.

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**Permitted Air Emissions**

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM <sub>10</sub>	-	-	-
SO <sub>2</sub>	-	-	-
NO <sub>x</sub>	-	-	-
CO	-	-	-
VOC	0.09	0.08	-0.01

**Non – VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
Hydrochloric Acid	1.65	2.09	+0.44
Chlorine	0.74	0.74	-
Phosphorous	0.02	0.03	+0.01
Total	2.41	2.86	+0.45

#### IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

**Applicability and Exemptions of Selected Subject Items**

See permit application.

**Prevention of Significant Deterioration/Nonattainment Review**

This application was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations and National Emission Standards for Hazardous Air Pollutants (NESHAP). New Source Performance Standards (NSPS), Non-attainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD) do not apply.

**Streamlined Equipment Leak Monitoring Program**

None

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**MACT Requirements**

The Phosphorous Trichloride ( $\text{PCl}_3$ ) Unit is not subject to the Maximum Achievable Control Technology (MACT) standards.

**Air Quality Analysis**

Louisiana Toxic Air Pollutant (LTAP) dispersion modeling is performed for the applicable LTAP compounds with emissions above the Minimum Emission Rate. The screening modeling results predict the maximum ground level concentrations of toxic air pollutants are below the Ambient Air Standards (AAS).

Impact on air quality from the emissions of the proposed units will be below the National Ambient Air Quality Standards (NAAQS) and the Louisiana Ambient Air Standards (AAS) beyond industrial property.

**General Condition XVII Activities**

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

**V. PERMIT SHIELD**

Not applicable.

**VI. PERIODIC MONITORING**

All periodic monitoring is conducted in accordance with state and federal regulations. See the Specific Requirements Section of the proposed permit renewal / modification for monitoring requirements.

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## **VII. GLOSSARY**

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H<sub>2</sub>S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO<sub>x</sub>) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), Carbon Disulfide (CS<sub>2</sub>)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit:  $\geq 10$  tons per year of any toxic air pollutant;  $\geq 25$  tons of total toxic air pollutants; and  $\geq 100$  tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM<sub>10</sub> – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

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Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO<sub>2</sub>) – An oxide of sulfur.

Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.